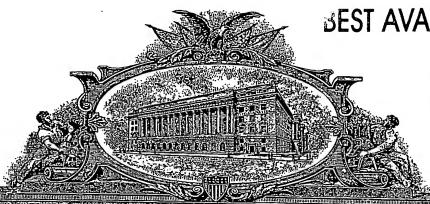
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UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office

July 02, 2003

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE.

APPLICATION NUMBER: 60/385,485

FILING DATE: June 04, 2002

RELATED PCT APPLICATION NUMBER: PCT/US03/17369

By Authority of the COMMISSIONER OF PATENTS AND TRADEMARKS

Certifying Officer

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PTO/SB/16 (02-01)

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PROVISIONAL APPLICATION FOR PATENT COVISIO QUITEDS

This is a second of the control number.

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

| Express Mail Label No. EV 050843273US | | | | | | | | | |
|---|---------------------------|-------------|---------------|------------------|---|--------------|--|--|--|
| INVENTOR(S) | | | | | | | | | |
| Given Name (first and midd | | Family N | lame or Sumam | e (City and | Residence and either State or Foreign Country) | | | | |
| CASIMIR JOHAN | | | RAWLEY | | CARMEL, INDIANA | | | | |
| Additional inventors are being named on the next separately numbered sheets attached hereto | | | | | | | | | |
| TITLE OF THE INVENTION (280 characters max) | | | | | | | | | |
| WIRELESS EFM SIGNAL LOSS DETECTION | | | | | | | | | |
| CORRESPONDENCE ADDRESS | | | | | | | | | |
| Direct all correspondence to: | | | | | Place Custome | er Number | | | |
| Customer Number | | | . | ⊳ | Bar Code Labe | | | | |
| | ype Customer N | lumber here | | | | | | | |
| Firm or Individual Name JOSEPH S. TRIPOLI, THOMSON MULTIMEDIA LICENSING INC. | | | | | | | | | |
| Address | ddress PATENT OPERATIONS. | | | | | | | | |
| Address | P. O. BOX 53 | 312 | | | | | | | |
| City | PRINCETON | | State | NJ | ZIP | 08543-5312 | | | |
| Country | USA | | Telephone | 609-734-9444 | Fax | 609-734-9700 | | | |
| | ENCLOSED | APPLICAT | ION PARTS (c) | eck all that app | ly) | | | | |
| Specification Number of Pages 2 CD(s), Number | | | | | | | | | |
| Drawing(s) Number of Sheets Other (specify) | | | | | | | | | |
| Application Data Sheet. See 37 CFR 1.76 | | | | | | | | | |
| METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one) | | | | | | | | | |
| Applicant claims small entity status. See 37 CFR 1.27. | | | | | | | | | |
| A check or money order is enclosed to cover the filing fees FILING FEE | | | | | | | | | |
| AMOUNT (\$) | | | | | | | | | |
| The Commissioner is hereby authorized to charge filing | | | | | | | | | |
| fees or credit any overpayment to Deposit Account Number: 07-0832 160 | | | | | | | | | |
| Payment by credit card. Form PTO-2038 is attached. | | | | | | | | | |
| The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government. | | | | | | | | | |
| ⊠ No. | | | | | | | | | |
| Yes, the name of the U.S. Government agency and the Government contract number are: | | | | | | | | | |
| Respectfully submitted: June 4, 2002 | | | | | | | | | |
| TYPED or PRINTED NAME JOSEPH J. KOLODKA (if appropriate) | | | | | | | | | |
| TELEPHONE 609 734-9744 Docket Number: PU020269 | | | | | | | | | |

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is setting to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Tradsmark Office, U.S. Department of Commerce, Washington, D.C., 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C., 20231.

| FEE TRANSMITTAL | Complete If Known | | | | | |
|---|----------------------|-----------------------|--|--|--|--|
| | Application Number | N/A | | | | |
| for FY 2002 | Filing Date | HEREWITH | | | | |
| | First Named Inventor | Casimir Johan Crawley | | | | |
| Patent fees are subject to annual revision. | Examiner Name | N/A | | | | |
| | Group / Art Unit | N/A | | | | |

| <u></u> | AL MINOU | MI C | PATIM | EM (4) 100 | | | Attorne | y Docke | t No. | PU02 | 0269 | ノ |
|---|---------------|--------------|-----------------|---------------------------------------|--|---------------|-----------------------------|-------------------------------------|---|--------|--|---|
| METHOD OF PAYMENT (check one) | | | | | | | FEE CALCULATION (continued) | | | | | |
| The Commissioner is hereby authorized to charge | | | | | 3. ADDITIONAL FEES | | | | | | | |
| 1. Indicated fees and credit any over payments to: | | | | | | Large | | Small | | | | |
| Dense? | | | | | Fee | Entity Fee | Fee | Entity Fee | | | | |
| Deposit Account 07-0832 Number | | | | Code | (\$) | Code | (\$) | Fee Description | Fee Paid | | | |
| | | | | 105 | 130 | 205 | 65 | Surcharge - late filing fee or oath | Faio | | | |
| Deposit | | | | | 127 | 50 | 227 | 25 | Surcharge - late provisional filing fee or cover sheet. | | | |
| Account THOMSON multimedia Licensing Inc. | | | | | 139 | 130 | 139 | 130 | Non-English specification | | | |
| Name | | | | | 147 | 2,520 | 147 | 2,520 | For filing a request for reexamination | | | |
| Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17 | | | | | 112 | 920* | 112 | 920° | Requesting publication of SIR prior to Examiner action | | | |
| Applicant claims small entity status. See 37 CFR 1.27 2. Payment Enclosed: | | | | | 113 | 1,840° | 113 | 1,840* | Requesting publication of SIR after Examiner action | | | |
| - L | rayina | H CHU | osea: | | | | 115 | 110 | 215 | 55 | Extension for reply within first month | |
| ☑ Check ☐ Credit card ☐ Money ☐ Other Order | | | | | 116 | 400 | 216 | 200 | Extension for reply within second month | | | |
| | | | FEE C | LCULATION | | | 117 | 920 | 217 | 460 | Extension for reply within third month | |
| 1. | BASIC FI | | EE | | | | 118 | 1,440 | 218 | 720 | Extension for reply within fourth month | |
| Large | Entity | | Entity | | | | 128 | 1,960 | 228 | 980 | Extension for reply within fifth month | |
| Fee Code | | Fee Code | Fee (\$) | Fee Description | Con Dold | | 119 | 320 | 218 | 160 | Notice of Appeal | |
| 101 | | 201 | • • | Utility filing fee | Fee Paid | _ | 120 | 320 | 220 | 160 | Filing a brief in support of an appeal | |
| 108 | | 206 | | | | | 121 | 280 | 221 | 140 | Request for oral hearing | |
| 107 | 510 | 207 | 255 | Design filing fee Plant fillng fee | | _ | 138 | 1,510 | 138 | 1,510 | Petition to institute a public use proceeding | |
| 108 | | 208 | | Reissue filing fee | | | 140 | 110 | 240 | 55 | Petition to revive - unavoidable | |
| 114 160 214 80 Provisional filling fee 160 | | | | 141 | 1,280 | 241 | 640 | Petition to revive - unintentional | | | | |
| SUBTOTAL (1) (\$) 160 | | | | 142 | 1,280 | 242 | 640 | Utility issue fee (or relesue) | | | | |
| | | | | -(-) | (\$) 160 | | 143 | 460 | 243 | 230 | Design Issue fee | |
| 2. EX | TRA CLAI | M FEE | S | | | | 144 | 620 | 244 | 310 | Plant issue fee | |
| | | | | Extra Fee from | | | 122 | 130 | 122 | 130 | Petitions to the Commissioner | |
| Total Cla | eime - | | 20 ** = | Claims below | Paid | _ | 123 | 50 | 123 | 50 | Processing fee under 37 CFR 1.17 (q) | |
| independ Cialms | | == | -3 ** = | | = _0 | ┪ | 126 | 180 | 126 | 180 | Submission of Information Disclosure Simt | |
| Multiple Depende | nt | | | x | = 0 | \exists | 581 | 40 | 581 | 40 | Recording each patent assignment per property (times number of properties) | |
| Large Fee | Entity Fee | / Sma Fee | ii Entii Fee | • | | | 146 | 740 | 246 | 370 | Filing a submission after final rejection (S7 CFR § 1.129(a)) | |
| Code 103 | (\$) 18 | Code 203 | | Fee Description Claims in excess of | | | 149 | 740 | 249 | 370 | For each additional invention to be examined (37 CFR § 1.129(b)) | |
| 102 | 84 | 202 | 42 | Independent claims | | | 179 | 740 | 279 | 370 | | |
| 104 | 280 | 204 | 140 | | | | | | | | Request for Continued Examination (RCE) | |
| 109 | 84 | 209 | 42 | ** Reissue indepen original patent | | | 169 | 900 | 169 | 900 | Request for expedited examination of a design application | |
| 110 | 18 | 210 | 9 | ** Reissue claims i | n excess of 20 | and | | | | | | |
| over original patent | | | | | Other fee (specify) | | | | | | | |
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| **or number previously pard, if greater: For Reissuas, see above | | | | | *Reduced by Basic Filing Fee Paid SUBTOTAL (3) (3) 0 | | | | | | | |

| SUBMITTED BY | | | Con | nplete (if applicable) |
|-------------------|-------------------|--|-----------|------------------------|
| Name (Print/Type) | JOSEPH J. KOLODKA | Registration No. Attemey/Agent) 38,731 | Telephone | 609-734-9744 |
| Signature | Mary | CUL | Date | June 4, 2002 |

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Wireless EFM Signal Loss Detection

Brief Summary Of The Invention

A Lyra Wireless receiver board microprocessor initializes an EFM decoder in order to recover the original digital audio stream from incoming EFM data sent by a Lyra Wireless transmitter board. The microprocessor continually queries the EFM decoder and determines whether the decoder's EFM PLL is locked or unlocked. If the EFM PLL is unlocked, then the microprocessor will perform an EFM decoder soft reset and re-initialization.

A problem has been observed whereby a receiver board will cease its EFM decoding after long periods of transmitter board idleness. Further investigation revealed that the decoder's EFM PLL had unlocked. Receiver board resetting or power cycling was the only recovery method. This problem and recovery method is confusing and inconvenient to the customer. This invention automatically detects and recovers from this unlocked condition.

Description Of Invention

Figure 1 contains a Lyra Wireless receiver board block diagram. The Motorola 68HC05 microprocessor continually polls the Philips SAA7325 EFM decoder's EFM PLL lock status over the I2C bus.

Figure 2 contains a flowchart that shows the receiver board's 68HC05 PLL unlocked condition detection and recovery algorithm. The 68HC05 first initializes the SAA7325 decoder. The 68HC05 continually polls the SAA7325 for an EFM PLL unlocked condition. If an unlocked condition is detected, the 68HC05 resets and reinitializes the SAA7325 decoder.

The important new feature of this invention is automatic EFM PLL unlocked condition detection and recovery. User awareness or intervention is not required. This invention was successfully implemented on all existing Lyra Wireless hardware on January 30, 2002 with only receiver board firmware modifications. This invention has been incorporated into all future receiver board firmware releases.

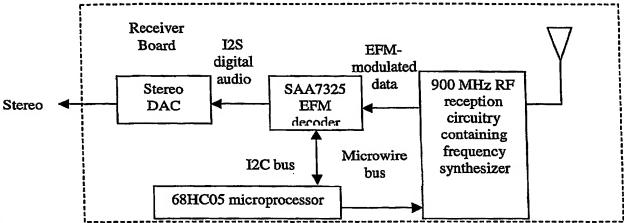


Figure 1 Lyra Wireless Receiver Board Block Diagram

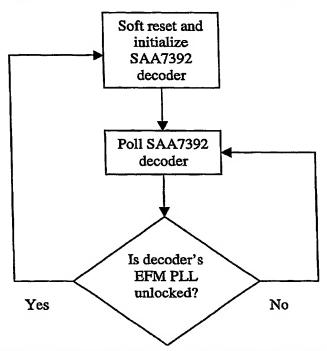


Figure 2 Lyra Wireless PLL Unlocked Condition Detection and Recovery Algorithm